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## EUROPEAN PATENT APPLICATION

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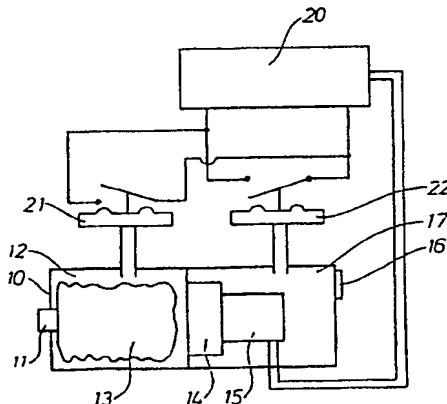
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⑯ Suction cleaner.

⑯ In a suction cleaner comprising a housing (10) having an inlet (11), a filter chamber (12) with a filter bag (13), a suction fan (14) with a motor (15), and an outlet passage (17) through which filtered air passes from the suction fan to an outlet (16), the motor is provided with a control circuit (20) adapted to be activated by a first pressure switch (21) which is actuated by the underpressure in the filter chamber (12) in order to control the motor power at a predetermined level. According to the invention, the suction cleaner is provided with a second pressure switch (22) which is actuated by the pressure in the outlet passage (17) and adapted to activate the control circuit (20) when said pressure exceeds a predetermined level.



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**Description**

The present invention relates to a suction cleaner comprising a housing having an inlet for dust-laden air, a filter chamber with a filter bag, a suction fan, a motor, and an outlet passage through which filtered air flows from said suction fan to an outlet, said motor having a control circuit adapted to be activated by a first pressure switch actuated by the underpressure in the filter chamber in order to control the motor power at a predetermined level.

By means of the control circuit the underpressure is restricted to a predetermined value in that the power of the motor is automatically reduced when this value is exceeded. The suction cleaning nozzle is thereby prevented from adhering by suction to the surface to be cleaned, for example during cleaning of soft carpets. It is a disadvantage of this arrangement, however, that the air flow increases when the nozzle is raised from the surface, since the sensed underpressure is reduced. The disadvantage of the increased air flow is that it produces a disturbing noise.

The object of the present invention is to provide a suction cleaner in which this disadvantage has been eliminated. This has been obtained by means of a suction cleaner of the type mentioned in the introduction which according to the invention is characterized by a second pressure switch actuated by the pressure in the outlet passage and adapted to activate the control circuit when said pressure exceeds a predetermined level.

The invention will be described in more detail in the following with reference to the accompanying drawing which illustrates a diagrammatical longitudinal section of a suction cleaner provided with the control equipment according to the invention which is also shown diagrammatically.

The suction cleaner shown in the drawing comprises a housing 10 having an inlet 11, a filter chamber 12 with a filter bag 13, a suction fan 14, a motor 15, and an outlet 16.

A control circuit 20 of a known type is connected to the motor 15, said control circuit being adapted, when activated, to reduce the motor power to a predetermined level. The control circuit is connected to a first pressure switch 21 which is actuated by the pressure in the filter chamber 12 and activates the control circuit when this pressure falls below a predetermined value. An excessive increase of the underpressure causing the nozzle to adhere by suction to the surface to be cleaned is thereby prevented.

A second pressure switch 22 is connected to the control circuit 20 in parallel with the first pressure switch 21. The second switch is actuated by the pressure in the outlet passage 17 between the fan 14 and the outlet 16 and activates the control circuit when this pressure exceeds a predetermined level. The flow of air through the suction cleaner and consequently also the sound level are thereby reduced in response to a decreasing suction resistance, such as when the nozzle is raised from

**Suction Cleaner**

the surface to be cleaned.

In accordance with the invention, a suction cleaner has thus been provided in which the underpressure as well as the air flow have been restricted to suitable, predetermined levels.

**Claims**

1. Suction cleaner comprising a housing (10) having an inlet (11) for dust-laden air, a filter chamber (12) with a filter bag (13), a suction fan (14), a motor (15), and an outlet passage (17) through which filtered air flows from said suction fan to an outlet (16), said motor (15) having a control circuit (20) adapted to be activated by a first pressure switch (21) actuated by the underpressure in the filter chamber in order to control the motor power at a predetermined level, characterized by a second pressure switch (22) actuated by the pressure in the outlet passage (17) and adapted to activate the control circuit (20) when said pressure exceeds a predetermined level.

2. Suction cleaner according to claim 1, characterized in that both said pressure switches (21, 22) are interconnected in parallel.

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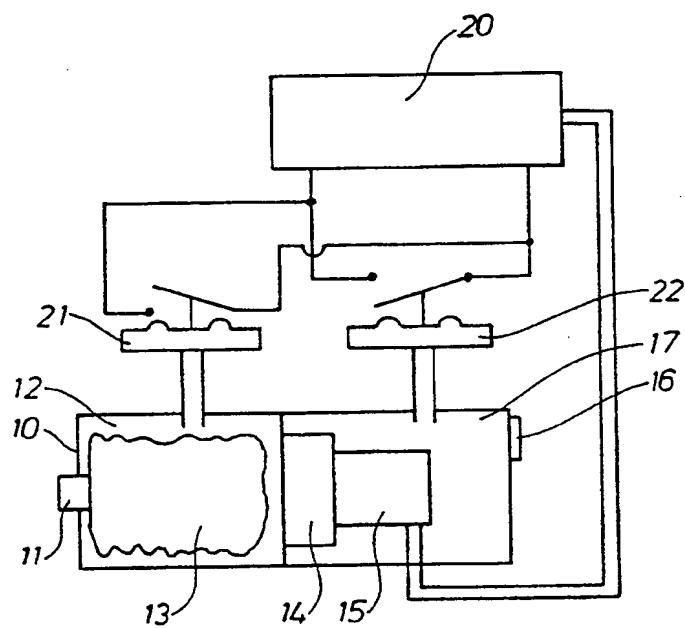
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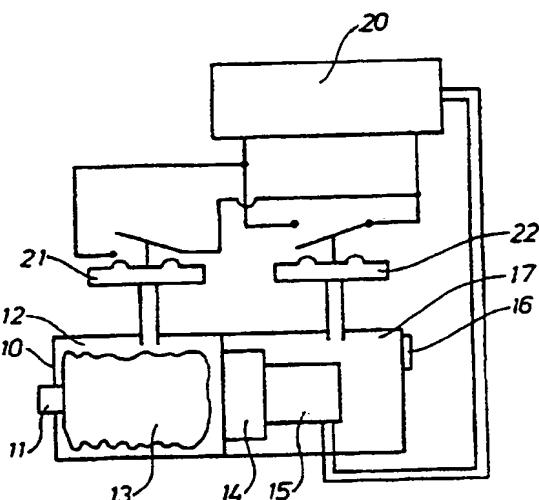
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(54) Suction cleaner.

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(57) In a suction cleaner comprising a housing (10) having an inlet (11), a filter chamber (12) with a filter bag (13), a suction fan (14) with a motor (15), and an outlet passage (17) through which filtered air passes from the suction fan to an outlet (16), the motor is provided with a control circuit (20) adapted to be activated by a first pressure switch (21) which is actuated by the underpressure in the filter chamber (12) in order to control the motor power at a predetermined level. According to the invention, the suction cleaner is provided with a second pressure switch (22) which is actuated by the pressure in the outlet passage (17) and adapted to activate the control circuit (20) when said pressure exceeds a predetermined level.





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## EUROPEAN SEARCH REPORT

Application Number

EP 89 85 0150

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
P, Y	DE-A-3712233 (LICENTIA PATENT VERWALTUNGS GMBH) * the whole document *	1, 2	A47L9/28
Y	US-A-4514874 (G. KURZ) * the whole document *	1, 2	
Y	US-A-4021879 (R.N. BRIGHAM) * the whole document *	1, 2	
A	US-A-2580643 (ELECTROLUX CO)		
A	GB-A-2012158 (ELECTROLUX LTD)		
TECHNICAL FIELDS SEARCHED (Int. Cl.4)			
A47L			
The present search report has been drawn up for all claims			
1	Place of search  THE HAGUE	Date of completion of the search  28 AUGUST 1990	Examiner  VANMOL M.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document	
<b>X</b> : particularly relevant if taken alone <b>Y</b> : particularly relevant if combined with another document of the same category <b>A</b> : technological background <b>O</b> : non-written disclosure <b>P</b> : intermediate document			

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